

School of Kinesiology
Faculty of Health Sciences
Western University

**KIN 4520B CLINICAL BIOMECHANICS
WINTER 2019**

Instructor: Dr Jim Dickey

Location: TBD

Lectures: Monday/Friday 1:30-2:20

Laboratories: TBD

TAs: TBD

Office: Thames Hall 3159A

Office Hours: arranged by email

Instructor Contact: (email preferred)

Phone: 519-661-2111 x87834

Email: jdickey@uwo.ca

NOTE: All course information including grades, assignment outlines, deadlines, etc. are available via OWL. Check the website regularly for course announcements.

Calendar Course Description:

This course is designed to explore the theoretical basis of clinical biomechanics and develop hands-on skills necessary to work in the area. Special emphasis will be in the areas of: Posture and Balance, Gait, and Orthopaedic Biomechanics

Students will need a calculator with trigonometric functions. Please, bring your calculator to ALL lectures and lab sessions.

NOTE: YOU WILL NOT BE PERMITTED TO USE YOUR PHONE AS A CALCULATOR IN ANY QUIZES OR EXAMINATIONS.

Anti-requisite(s)|Pre-requisite(s)|Co-requisite(s)

You are responsible for ensuring that you have successfully completed all course pre-requisites, and that you have not taken an anti-requisite course.

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped off.

Learning Outcomes:

The students will learn the theoretical underpinnings of Clinical Biomechanics through discussion of Posture and Balance, Gait, and Orthopaedic Biomechanics. The students will be exposed to different biomechanical measurements and analyses in the laboratory components of the course. The students will gain hands-on experience in the small-group research project component of the course.

Upon completion of this course students will be able to:

1. **Identify and delineate** theoretical terms, concepts, and fundamental principles related to specific topics within Clinical Biomechanics such as Posture and Balance, Gait, and Orthopaedic Biomechanics (Knowledge)
2. **Compare and contrast** different theoretical approaches to specific topics within Clinical Biomechanics, such as standing balance and risk of falling. (Analysis)
3. **Develop** hands-on research skills through the small-group research project (Application)
4. **Further develop** abilities to *critically reflect* upon own learning and relate to the topics discussed in class. (Reflection)

Required Course Material:

All required readings and lecture notes will be posted on OWL.

Course Evaluation Summary: (this is an example)

1.	Lab Quizzes	10%
2.	Small-Group research project written report	20%
3.	Small-Group research project presentation and abstract	5%
4.	Mid Term (February 19 th , in class)	25%
5.	Final Exam	40%

Course Evaluation Details:

1. Labs will be announced in class and on OWL. The laboratory evaluations are comprised of short-answer quizzes completed at the end of the laboratory sessions.

2. Small-Group research projects:

The scope of these projects is to replicate a published research study. Suggested topics include balance or gait, as the background for these topics will be covered in class in the first part of the term. The purpose of these projects is to provide a hands-on laboratory experience tailored to the interests of the group. Students will pick groups of 4 or 5 members from the students in the same lab section. These groups must pick a research study to replicate that must be 1) based within Clinical Biomechanics, 2) must involve collecting and analyzing data, and 3) must use available equipment and software (i.e. force plate). Within each lab section, each project must be unique (based on a different published research study), and must be pre-approved by Dr. Dickey.

The steps include picking a group and approval of the published research article, organizing hardware and software requirements, started data collection, started analyzing the data, writing the final report. A draft copy of the introduction and methods sections, including proper citations and references, should be submitted to enable feedback. Deliverables at the end of the project include an abstract (including the purpose of the study and the main results), and the group will present their project in class. The final report is in the form of a complete manuscript based on the data collected for the group project. The final project must be handed

was seriously affected by illness and could not reasonably be expected to meet his/her academic responsibilities.

Students who are in emotional/mental distress should refer to Mental Health@Western (<http://www.health.uwo.ca/>) for a complete list of options about how to obtain help.